



IMMUNIZATION HIGHLIGHTS 2011–2012



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Introduction

The WHO European Region encompasses 53 countries, each with its own unique set of challenges in the area of immunization. In 2011–2012, the Vaccine-preventable Diseases and Immunization (VPI) Programme at the WHO Regional Office for Europe supported this diverse group in striving to meet immunization goals.

The challenges faced in 2011 and 2012 included, most significantly, large outbreaks of measles and sustained endemicity of rubella that threaten the Region's 2015 measles and rubella elimination goal. More general concerns abound as well, such as complacency and persistent misinformation, which together threaten to undermine decades of progress in immunization coverage rates in some countries. These issues are exacerbated by problems with timeliness and completeness in reporting of surveillance data.

Nevertheless, 2011–2012 can also be considered a period of great progress and achievement.

At country level, various Member States:

- introduced new vaccines and initiated plans to introduce others, such as pneumococcal, Haemophilus influenzae type b (Hib) and HPV vaccines;
- sustained high routine immunization coverage;
- continued to invest in strengthening immunization services;
- made significant progress in sustaining immunization investments during a period of transition away from donor support;
- strengthened laboratory networks and achieved accreditation, as well as successful proficiency testing in 2012, for all WHO measles-rubella laboratory network laboratories.

At Regional level, the 53 Member States of the WHO European Region together:

- marked 10 years of polio-free certification, which was evidence of the strong, successful and coordinated response to the 2010 polio outbreak;
- initiated the verification process for measles and rubella elimination, with issuance of the framework document and establishment of the Regional Verification Commission and several national verification committees.

At global level, WHO Member States declared, through the 65th World Health Assembly in May 2012, the completion of polio eradication a “programmatically emergency for global public health”. They also adopted the Global Vaccine Action Plan, which emphasizes the importance of reaching the Regional measles and rubella elimination target, but also advocates further strengthening of routine immunization, introduction of new vaccines and expansion of vaccination programmes to encompass broader age groups. The Action Plan provides a new framework for taking collective action to reverse the negative trends of the past few years.

Guided by this Plan and under the umbrella of the global Decade of Vaccines (2011–2020), VPI and partners work together to integrate and coordinate all immunization-related activities in the WHO European Region. The end-goal of everything we in the VPI Programme do is to ensure that every child in the Region lives free from vaccine-preventable diseases. Through our work we support our Member States’

shared vision, as outlined in the European health policy Health 2020, to significantly improve the health and well-being of populations, reduce health inequalities, strengthen public health and ensure sustainable people-centred health systems that are universal, equitable, sustainable and of high quality.

The VPI Programme looks forward in 2013 and 2014 to maintaining the measles verification process across the Region and assisting in the establishment of national verification committees. Patterned after the Region’s success in eliminating polio over 10 years ago, this proven approach offers the surest path toward achievement of the 2015 measles and rubella elimination target. At the same time, we must not lose sight of the fragility of past gains in eliminating polio from the Region, and will continue to support several Member States in reducing their vulnerability to importation.

We also pledge to scale-up support for improving surveillance, particularly of rubella and congenital rubella syndrome, as well as for strengthening the Region’s capacity to investigate and respond to disease outbreaks.

Over the coming years, we will endeavour to equip Member States with tools that enable immunization programmes to develop more targeted and tailored methods of promoting immunization — to close gaps in immunization coverage and provide equitable protection for all population groups in the Region.

Dr Dina Pfeifer

Programme Manager
Vaccine-preventable Diseases and Immunization
(VPI) Programme
WHO Regional Office for Europe

About the VPI Programme

The Vaccine-preventable Diseases and Immunization Programme at the WHO Regional Office for Europe provides policy guidance and technical assistance to countries to maximize equitable access to vaccines of assured quality, including new immunization products and technologies.

Over 20 dedicated professionals at the Regional Office in Copenhagen as well as in several country offices carry out the Programme's work in close collaboration with our partners: ministries of health, national health institutes, international organizations and bilateral agencies.

Most Programme activities focus on diseases with elimination and eradication targets: controlling the current measles and rubella outbreaks, achieving measles and rubella elimination by 2015 and sustaining the Region's polio-free status.

Achieving elimination and immunization targets depends to a large extent on countries' capacities to monitor the spread of disease. VPI therefore supports countries in strengthening surveillance for vaccine-preventable diseases. It also provides technical support and guidance for expanding immunization systems and schedules to include new and underutilized vaccines.

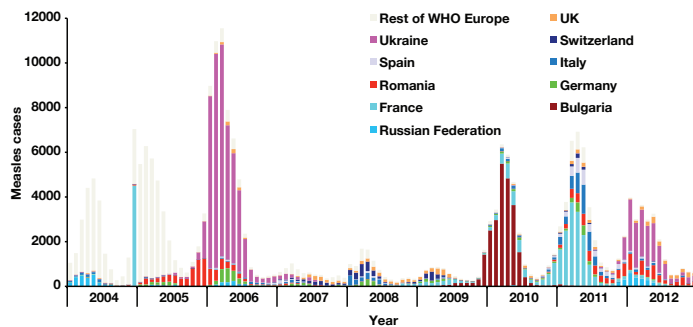
1. Controlling measles and rubella outbreaks



Measles

Ongoing and widespread measles outbreaks defined the years 2011 and 2012, perhaps more than anything else, for the VPI Programme. Following an already challenging resurgence in 2010, with 30 532 cases reported, incidence of the disease continued to climb in 2011, with 36 840 cases reported. Though still too high, the number of reported cases declined significantly in 2012, as did the number of countries with high incidence and large measles outbreaks (see Fig. 1).

Fig. 1. Measles in the WHO European Region (source: Centralized information system for infectious diseases (CISID)).



Data from these and previous years indicate that the problem of measles outbreaks was not isolated to a particular country or subregion. In most recent years particularly large outbreaks occurred in France (2011) and Ukraine (2012), and the majority of cases occurred in western European countries. However, in most of the cases outbreaks were not adequately controlled with comprehensive supplemental immunization of susceptible population groups and were not followed by increased and maintained high vaccine coverage in national routine immunization programmes, therefore measles continued to “swing” between subregions and countries. A similar trend is expected for the upcoming years if no adequate countermeasures are taken.

Based on further analysis of data, the most concerning issue is the continued spread of the measles virus among the general public. A significant part of the adolescent and young adult population continues to be susceptible in almost all of the countries. Many countries also face challenges with vulnerability and susceptibility to measles among specific subgroups, which include minority ethnic groups such as Roma communities and some religious and philosophical groups such as followers of anthroposophy among many others. Unimmunized for a diversity of reasons, these subgroups are commonly the first affected in outbreaks and, in some cases, are related to further international spread of disease.

“France can simply not afford to have deaths, painful and costly hospitalizations, disruptions to work and school from a completely vaccine-preventable disease. High vaccination coverage in France and every European country is essential to stop this measles outbreak for good.”

**Jean-Yves Grall, Director-General for Health in France,
2 December 2011**

Selected WHO activities

The VPI team carefully monitored the measles situation over the two-year period and had frequent interaction with the most affected countries during the outbreaks. This made it possible to ensure that surveillance data were current and complete, obtain clarification about the circumstances of outbreaks and discuss response measures. The team also followed up on cases in the measles-free WHO Region of the Americas (PAHO), after measles were exported there from Europe in 2011.

The VPI Programme further played an instrumental role in preparing and contributing to measles and rubella epidemiology papers and updates for the Disease Outbreak News page on the WHO headquarters web site, in addition to articles for the WHO *Weekly Epidemiological Record* (WER) and the *Morbidity and Mortality Weekly Report* (MMWR) of the United States Centers for Disease Control and Prevention (CDC). It also published Region-specific data and offered analysis on a monthly basis via the WHO *Epidemiological Brief*.

Measles in western Europe in 2011

Despite having strong health systems and access to vaccines for most of the population, western European countries reported the majority of all measles cases in 2011. Though France had the highest number of cases (14 966), several other countries also reported cases numbering in the thousands (Italy: 5187, Spain: 3507, Germany: 1600 and United Kingdom: 1083).

The outbreak in western Europe was among the largest in the world in 2011, and measles from Europe were linked to outbreaks in several other countries including Australia, Brazil and Canada and the United States, the latter of which experienced its highest number of measles cases since 1996.

Among other steps taken in response to the measles outbreak in 2011, France launched a nationwide communications campaign in October 2011 to raise awareness about the need for measles vaccination. As most people infected by the disease were over 10 years of age, the campaign targeted this age group – recommending that everyone born since 1980 verify their vaccination status and ensure that they receive two doses of the measles-containing vaccine (MMR). Parents were also advised to immunize children in daycare settings at 9 months (rather than the usual 12 months), followed by a second dose before age two years.

Case study of measles importations to Slovenia in 2011

In 2011, following 10 years with no reported indigenous cases of measles, Slovenia reported an outbreak of measles. Unlike other Member States that experienced large and prolonged secondary transmission and outbreaks following importation in 2011, the 6 imported cases in Slovenia resulted in a total of only 22 measles cases. The WHO measles and rubella elimination surveillance guidelines stipulate that, in countries in pre-elimination phase, measles outbreaks resulting from importations should have not more than 10 secondary cases per chain of transmission. The importations into Slovenia in 2011 resulted in fewer measles cases compared to other Member States, and the 22 reported cases had a diversity of genotypes (suggesting separate chains of transmission and independent importation events).

Several factors may have contributed to the successful containment of the Slovenian outbreak, including:

- persistently high vaccination coverage in a strong immunization programme;
- a sensitive high-performing surveillance system with strong laboratory support;
- a school entry requirement of measles vaccination;
- an adequate cold chain; and
- an outbreak response with prompt investigation of every case and cluster followed by immediate implementation of control measures.

A case study of the measles surveillance and control system in Slovenia provides an opportunity for other Member States of the Region to improve their programmes' ability to limit the local spread of future importations.

Rubella

Rubella is generally considered to be a mild childhood illness; however, it is more severe in infants and adults; and if occurring during the early stages of pregnancy it can cause congenital rubella syndrome (CRS) leading to severe birth defects or death of the foetus. Significant progress has been made in reducing the burden of rubella and CRS in the WHO European Region in the past decade: between 2001 and 2010, the Region achieved a 99% decline in reported cases of rubella.

However, outbreaks continue, with over 29 000 cases of rubella being reported in 2012 from just a few countries in the WHO European Region.

Romania, for example, suffered a large nationwide outbreak of rubella that started in 2011 and peaked in 2012. The outbreak involved over 25 000 cases in the two-year period, mostly among those aged 15–19 years. The particular burden on this age group can be explained in part by the historical MMR vaccination schedule in Romania: children born between 1995 and 1996 (who were 16–17 years old in 2012) were not eligible for rubella vaccination.

Almost all countries in the Region now have a national notification system in place for rubella, except Belgium, Denmark and France. In 2012, Germany was in the process of introducing a mandatory reporting system for rubella.



A young girl getting vaccinated against diphtheria in Tajikistan, © WHO/Tahmina Alimamedova

2. Eliminating measles and rubella by 2015

The countries of the European Region set the new 2015 target date for measles and rubella elimination in a resolution adopted by the WHO Regional Committee for Europe in September 2010. In 2011–2012, the VPI Programme made significant contributions in helping Member States reach that milestone.

“Historically, there has been a high level of mortality related to measles, but today the disease is preventable. The vaccine against it is cheap, safe and effective, and eliminating the disease is therefore an important public health priority.”

Dr Robin Biellik, RVC member, 24 January 2012

MEASLES AND RUBELLA 2011–2012

Key achievements:

- Strengthening surveillance in key countries.
- Initiation of verification process for measles and rubella elimination.
- Ongoing support to Member States (especially to countries affected with outbreaks).
- Updated measles and rubella surveillance guidelines.

Key challenge: Re-establishing Member States' commitment to elimination target.

Priority for 2013: Continuing RVC and NVC activities for verification process.

To begin documenting progress towards elimination, the Regional Office developed a proposed framework that describes in detail the steps to be taken to document and verify that the elimination of measles, rubella and the prevention of congenital rubella syndrome has been achieved in the WHO European Region.

A Regional Verification Commission for Measles and Rubella Elimination (RVC) was established in 2011, for which the WHO Regional Office for Europe serves as secretariat. At its first meeting in January 2012, the RVC recommended establishment of a national verification committee (NVC) in each Member State (MS) of the Region. It also suggested a standard template to be used by all NVCs to document relevant data on the elimination process in the form of an annual status report (ASR).

NVCs or similar structures were established in 16 of the Region's 53 Member States in 2012. The RVC expects to receive the first annual status reports by the end of July 2013. The first in a series of intercountry meetings of the RVC with NVC chairpersons and national measles



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and rubella focal points on verification of elimination took place in Tashkent, Uzbekistan, from 23 to 24 October 2012. Twelve countries (the newly independent states) were represented at this meeting. Three more subregional meetings are planned for 2013.

Key strategies for measles and rubella elimination and the verification process were presented to Member States of the European Union during the first EUROVACCINENET meeting, organized by the European Centre for Disease Prevention and Control (ECDC) in November 2012.

The VPI programme also worked to update its *Surveillance guidelines for measles, rubella and congenital rubella syndrome (CRS) in the WHO European Region*, in preparation for the elimination verification process. The updated guidelines have been presented at regional and subregional meetings, as well as country missions and scientific meetings, with the aim of increasing Member States' awareness of and commitment to the elimination goal.

Self-assessment tool

In May 2011, the Regional Office and ECDC released a joint tool known as MESSAGE – Measles and rubella self-assessment-generating tool. This self-administered, web-based questionnaire offers public health experts responsible for prevention and control activities a simple way to assess progress made towards eliminating measles and rubella.

Based on the WHO measles and rubella elimination strategic plan, MESSAGE automatically generates a report with recommendations, which can be used as a basis for further systematic and country-specific assessment and action.

Regional meeting on rubella

In February 2012, the Regional Office co-organized, in collaboration with the Sabin Vaccine Institute and other partners, a meeting on progress toward rubella elimination and congenital rubella syndrome (CRS) prevention. Over 150 people from 47 countries met in Rome, Italy, to discuss the strategies and work needed to eliminate measles and rubella from the European Region by 2015. This meeting served as a platform to disseminate a host of messages, materials and advocacy briefs and to support Member States in developing communication campaigns.

Identified challenges to achieving the elimination goal include persistence of susceptible populations and large gaps in case-based surveillance.

Progress in global measles control

According to a WHO report on progress in global measles control in the period 2000–2010, estimated global coverage with a first dose of vaccine increased from 72% in 2000 to 84% in 2011. The number of countries providing the second dose through routine services increased from 97 in 2000 to 141 in 2011. Since 2000, with support from the Measles & Rubella Initiative, more than 1 billion children have been reached through mass vaccination campaigns – about 225 million of them in 2011. Although the WHO Region of the Americas has sustained measles elimination since 2002, and the WHO Western Pacific Region is on track to achieve elimination, large outbreaks of measles are jeopardizing progress in the remaining regions that have these goals, including the European Region. In 2010, 40% of Member States worldwide did not meet the reported incidence target of <5 cases per million population.

Key challenges must be overcome to meet the 2015 targets, including: 1) declining political and financial commitments to measles control; 2) failure to reach uniform high coverage with two doses of measles-containing vaccine (MCV1 and MCV2) through routine services or supplementary immunization activity; and 3) inadequate subnational monitoring of MCV1 and MCV2 coverage.

Source: WHO *Weekly Epidemiological Record (WER)*, 18 January 2013, vol. 88, 3 (pp 29–36)

3. Sustaining the Region's polio-free status: no need for recertification after 2010 outbreak

POLIO 2011–2012

Key achievement: WHO European Region retained its polio-free status.

Key challenge: Member States remain at risk of importations of wild polioviruses until global eradication is achieved.

Priority for 2013: Ensure high-quality surveillance in all parts of the Region.

After being certified polio free in 2002, the European Region experienced a large outbreak of imported wild poliovirus in 2010. The outbreak began in Tajikistan and spread to three nearby countries – Kazakhstan, the Russian Federation and Turkmenistan. In all, the outbreak resulted in 479 laboratory-confirmed cases of polio and 31 deaths, in both adults and children.

The European Regional Certification Commission for Poliomyelitis Eradication (RCC) met in August 2011 to determine whether the Region would retain its polio-free status. The RCC:

- noted that poliovirus transmission had been interrupted and no new cases reported since the last case in September 2010;
- recognized that Member States had satisfactorily adopted the recommendations made at the 24th meeting in January 2011 in St Petersburg, the Russian Federation;
- commended the response by Member States, especially their efforts to protect their populations and stop the transmission of the poliovirus (through synchronized additional immunization activities, often involving nationwide vaccination campaigns);

“The RCC decision is tremendous news for the Region and a credit to all the Member States and partners that individually, collectively and promptly combated the first and largest outbreak of poliomyelitis the Region has seen since it was declared polio free in 2002.”

Zsuzsanna Jakab, WHO Regional Director for Europe, 25 August 2011

- acknowledged the contribution and technical support of the WHO Regional Office for Europe, the Global Polio Eradication Initiative partners and the Russian Federation, India and the United States Agency for International Development (USAID); and
- concluded that countries had provided sufficient evidence on immunization coverage and the sensitivity of their polio surveillance systems, including establishing sustainable transport of specimens.

There was, therefore, no need to recertify all 53 Member States of the WHO European Region or any subregion. At its 26th meeting in June 2012, the RCC re-confirmed the polio-free status of the Region, marking 10 years of polio-free certification.

Need to remain vigilant

The risk of polio transmission remains low for the Region, overall, but the RCC (in June 2012) considered six countries (Bosnia and Herzegovina, Georgia, Greece, Romania, Ukraine and Uzbekistan) and two subnational regions (north Caucasus of the Russian Federation and south-east Turkey) as being at high risk of transmission following an importation.

The situation in Ukraine is of particular concern, where national vaccination coverage levels fell dramatically in 2011, to below 60% in some areas (and below 30% in some regions of the country). These low coverage rates indicate that, should wild poliovirus or a circulating vaccine-derived poliovirus be introduced into the country, an explosive outbreak would likely follow – posing a serious threat to the global polio eradication effort.

In addition to strengthening surveillance capacity in the Region (see the Surveillance section below), the Regional Office took the following steps in 2011–2012 as part of ongoing efforts to retain the Region’s polio-free status:

- Risk assessments of polio transmission in the event of importation were performed for all Member States in 2012 and shared with countries for further evaluation and follow up.
- Cross-border immunization activities were coordinated with the Eastern Mediterranean and Western Pacific regions.

Synchronized polio supplementary immunization activities (SIAs) in 2011

Acting on the recommendations of the RCC, seven countries coordinated supplementary immunization activities (SIAs) during the first half of 2011. The goal of these SIAs was to effectively close any remaining immunity gaps and to prevent the transmission of wild poliovirus across borders in the future.

Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan conducted two rounds each with trivalent oral polio vaccine (tOPV); Kazakhstan and the Russian Federation conducted two rounds of subnational SIAs with monovalent OPV type 1 (mOPV1) and tOPV to halt possible transmission of wild poliovirus in high-risk territories. Azerbaijan implemented two rounds with tOPV in districts bordering the Russian Federation.

In total, more than 18 million children were reached with polio vaccines in 15 rounds of SIAs. In 2012, further rounds of polio SIAs with tOPV were conducted in the Russian Federation and Uzbekistan to consolidate success. Overall coordination and technical support was provided by WHO with financial support and resources provided by the Global Polio Eradication Initiative (United States Centers for Disease Control and Prevention, USAID, Rotary International, the United Nations Children's Fund) and the Russian Federation. High administrative coverage was reported and confirmed by independent monitoring uniformly conducted in Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

Polio outbreak simulation exercise (POSE)

The RCC has emphasized the risk of wild poliovirus importation and the importance of national preparedness. It recommends that national plans for action in response to a polio importation be developed and that countries conduct an exercise to test the national response plan. The 2010 polio outbreak underscored the importance of such exercises.

In keeping with the RCC's recommendation, the first "desktop" polio outbreak simulation exercise (POSE) was successfully implemented 14–15 December 2011 in Sarajevo, Bosnia and Herzegovina. It included the participation of three Member States: Bosnia and Herzegovina, Montenegro and Serbia.

The scenario of the exercise envisaged cross-border transmission of wild poliovirus from a Roma family travelling to Sarajevo via Bulgaria, Montenegro, Serbia and the former Yugoslav Republic of Macedonia. The participants "responded" to the detection and spread of wild poliovirus in line with their national plans, paying particular attention to initial response, reporting, immunization response, enhancing surveillance for polioviruses and crisis communication. The exercise helped motivate participants to critically review and update their national plans for responding to the detection of wild poliovirus.

The exercise was developed and conducted in close technical collaboration between the VPI Programme and the Emergency Response Department of the Health Protection Agency, United Kingdom (HPA), with support from the WHO Country Office in Bosnia and Herzegovina. Building on the success of the first simulation exercise, additional exercises are being organized in the United Kingdom (January 2013) and Ukraine involving four countries (May 2013).

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4. Strengthening national immunization systems

Strategic planning

In 2011 and 2012, the Regional Office helped seven countries (Armenia, Azerbaijan, Georgia, Kyrgyzstan, Republic of Moldova, Tajikistan and Uzbekistan) update their comprehensive multiyear plans, based on recent decisions made regarding the introduction of new vaccines (see section on new and underutilized vaccines). These plans, in addition to being a prerequisite for support from the GAVI Alliance¹, also provide a valuable tool for defining a country's immunization objectives, strategies and financial requirements.

Although strategic planning for immunization programmes does exist, there remains a need to strengthen countries' capacity on the costing and financing aspects of planning. It is important to increase domestic funding in order to cover the increasing costs of immunization programmes and to raise the country co-financing burden in countries scheduled for 'graduation' from GAVI support.

Data used to monitor vaccination coverage must also be improved, and national immunization programmes need to develop a better understanding of the unvaccinated and their reasons for not being vaccinated in order to more effectively target unreached populations.

¹ GAVI is an alliance of public and private partners, including WHO, that works with governments in developing nations to build sustainable immunization programmes and to ensure access to affordable vaccines. GAVI focuses its funding on the world's poorest countries most in need of support. The GAVI-eligible countries in the WHO European Region are Armenia, Azerbaijan, Georgia, Kyrgyzstan, Republic of Moldova, Tajikistan and Uzbekistan.

Supporting the establishment of advisory bodies

There continues to be a lack of understanding in some low- and middle-income countries about the value and vital role of standing independent advisory bodies on immunization, such as national immunization technical advisory groups (NITAGs), in providing scientific recommendations to ministries of health on immunization policy and practice.

A Regional meeting was therefore organized in October 2011 for national immunization programme managers. This meeting offered participants the opportunity to discuss WHO recommendations on the role, composition and functioning of advisory bodies and to hear the experiences of well-established NITAGs.

In 2011 the Regional Office and country offices in Kazakhstan, Kyrgyzstan, Ukraine and Uzbekistan also advocated and provided technical and financial support to the ministries of health for establishment of NITAGs, which were successfully established in 2012.

The Office also enabled recently established NITAGs to participate in the 2012 meeting of the European Technical Advisory Group of Experts (ETAGE) to build their capacity and improve collaboration between Regional and national advisory bodies.

ETAGE is a body of at least seven immunization experts appointed by the WHO Regional Director for Europe. This group is tasked with providing independent review and expert technical input to WHO/Europe's Vaccine-preventable Diseases and Immunization Programme, with the goal of facilitating and accelerating achievements in relation to the eradication, elimination and control of infectious diseases in the Region.

Diphtheria-tetanus immunization campaign in Tajikistan

A 2010 survey of immunity levels against major vaccine-preventable diseases revealed that more than half of the population in Tajikistan had no protection against diphtheria. This highlighted the need to improve routine immunization delivery, and to conduct a supplementary national immunization campaign against diphtheria and tetanus, to rapidly close immunity gaps and prevent outbreaks.

The Government of Tajikistan secured US\$ 1 million from the state budget to buy the vaccines and this amount was matched by the Government of the Russian Federation through UNICEF to procure auto-disable syringes and safety boxes and additional cold-chain equipment for the safe storage and transportation of vaccines. The first phase of the campaign, in April 2012, targeted children aged 3–6 years and covered almost 700 000 (98% of the target group). The second round, in September 2012, targeted all 2.5 million children and young people aged 7–21.

UNICEF and WHO worked closely with the Tajik Government to raise public awareness of the vaccination campaign. The organizations also provided technical support to strengthen quality and safety of immunization services during the campaign.

STRENGTHENING VACCINE SUPPLY AND MANAGEMENT 2011–2012

Key achievement: Effective Vaccine Management (EVM) assessments and improvement plans in countries eligible for GAVI support.

Key challenge: Increasing demands and complexity of immunization supply chains.

Priority for 2013: Monitor implementation of EVM improvement plans.

Vaccine supply and management

All Member States face challenges both in ensuring equitable access to vaccines and countering resistance to immunization triggered by safety events and misinformation. These challenges are compounded, especially in low- and middle-income countries, by growing public concerns regarding the quality and safety of administered vaccines; by expansion of immunization to youths, adults and special risk groups; and by deployment of large quantities of vaccine to respond to emerging public health crises.

The VPI Programme supports countries in addressing these issues by providing regional and country-based expertise and technical support to ensure access to affordable and cost-effective vaccines of assured quality and to build the public trust that vaccines are kept safe and effective from the point of arrival in the country to the point they are administered.

Technical assistance in 2011 and 2012 focused on policy development, capacity building, assessing performance and evidence-based planning to improve the vaccine supply chain, strengthening immunization safety and developing national policies on injection safety and health care waste management.

An effective vaccine management (EVM) assessment tool, developed by WHO in cooperation with global partners, was also launched to help Member States assess vaccine management systems using nine criteria and related indicators. Nine countries implemented the tool and developed immunization supply chain improvement plans (Albania, Armenia, Azerbaijan, Georgia, Kyrgyzstan, Republic of Moldova, Tajikistan, the former Yugoslav Republic of Macedonia and Uzbekistan).



WHO representative talking with health workers during a monitoring visit at a vaccination clinic in Tajikistan, September 2012 © WHO/Tahmina Alimamedova

5. Supporting new and underutilized vaccines implementation (NUVI)



NUVI 2011–2012

Key achievement: Successful introduction of Hib vaccine in Azerbaijan; successful introduction of rotavirus vaccine into the national immunization schedules in Armenia and the Republic of Moldova; increased target group coverage of HPV vaccine in the former Yugoslav Republic of Macedonia.

Key challenge: Lack of local evidence on the burden of invasive bacterial diseases to support decision-making on introduction of pneumococcal vaccine.

Priority for 2013: Building capacity of recently established NITAGs.

The VPI programme at the Regional Office supports Member States through the entire process of introducing and managing new and underutilized vaccines in national immunization programmes.

The Programme facilitates the sharing of knowledge and good practice through meetings and workshops held across the Region. It also provides guidance and technical support to countries in collecting evidence and making informed decisions about whether, when and how to introduce new antigens. In particular, VPI helps countries that must bear the full cost of new vaccines to conduct economic evaluations and collect local evidence to support decision-making. In the coming years, the Regional Office will continue its work to increase countries' capacity to conduct self-evaluations of cost-effectiveness of new vaccines.

Once the decision to introduce new vaccines is made, VPI assists national immunization programmes in preparations to introduce the new vaccines and monitor progress. This includes educating medical professionals and academics about the vaccine to ensure their support and acceptance, as well as providing the ministries of health with technical support, such as in training vaccinators.

After introduction, the VPI Programme supports Member States in conducting evaluations to assess the impact of new vaccines on immunization programmes and disease burden. These evaluations help develop lessons learnt for future vaccine introduction.

Among other activities, the VPI Programme supported:

- a self-evaluation of cost-effectiveness of rotavirus vaccine using the ProVac economic model, conducted by the Albanian Ministry of Health;
- a post-introduction evaluation of Hib vaccine in Azerbaijan;
- a regional training workshop on 16–18 October 2012 for experts from Croatia, Estonia and Georgia on evaluating the cost-effectiveness of pneumococcal and rotavirus vaccines.

Introduction of HPV vaccination

Since 2007, WHO has been providing support to Member States of the European Region to help them decide whether, when and how to introduce HPV vaccination into their national immunization programmes, to evaluate progress.

By the end of 2012, 21 countries in the WHO European Region had introduced human papilloma virus (HPV) vaccine. Of these countries, Denmark, Luxembourg, Italy, Portugal, Spain, Switzerland and the United Kingdom have been successful in achieving target group coverage of $\geq 80\%$. With WHO headquarters' support, the Regional Office hosted a regional meeting in October 2011 to allow Member States to present their activities and share experiences regarding introduction of HPV vaccination. Emphasis was placed on implementation of a comprehensive approach to cervical cancer prevention that combines HPV vaccination and continued screening.

6. Strengthening surveillance and laboratory networks

Supporting countries in the collection of local surveillance data is a critical part of the VPI Programme's work, as vaccine-preventable diseases cannot be controlled, eliminated or eradicated without well-functioning clinical detection and laboratory testing. Close monitoring of immunization coverage is also essential to measure progress toward herd immunity for specific diseases and to assess the risk of outbreaks.

In 2011, the VPI Programme established a methodology and procedures for cooperation with the European Centre for Disease Prevention and Control on vaccine-preventable disease (VPD) surveillance in European Union countries, following the transition of VPD surveillance responsibilities from EUVAC.NET to ECDC's TESSy platform.

Progress in establishing high-quality surveillance systems varies per disease and national context.



WHO staff with health workers at the Vahdat Polyclinic during second phase of diphtheria vaccination campaign in Tajikistan, September 2012 © WHO/ Tahmina Alimamedova

POLIO

While overall acute flaccid paralysis (AFP) surveillance performance indicators reported for the Region in 2011 and 2012 met or exceeded WHO minimum standards, these indicators have declined in some countries in recent years.

Independent polio surveillance reviews were conducted in Azerbaijan (2012), Georgia (2012), Kazakhstan (2011), Kyrgyzstan (2012), Tajikistan (2011), Turkmenistan (2011), Ukraine (2012) and Uzbekistan (2011).

Diseases preventable by new and underutilized vaccines (NUV)

VPI continues to support countries in the establishment of sentinel surveillance systems and networks to monitor diseases preventable by NUV, including rotavirus, pneumococcal disease and Hib. The objectives of these surveillance systems are to provide local data on disease burden which are needed to make informed decisions about the use of NUV and to monitor the impact on disease following vaccine introduction. VPI provides direct technical assistance in the establishment of these surveillance systems, including the development and strengthening of the capacity of laboratories that are critical for identifying cases of disease with vaccine-preventable etiologies.

NUV SURVEILLANCE 2011–2012

Key achievement: Rotavirus surveillance network well established, enrolling more than 11 000 children per year and providing valuable data for describing the burden of rotavirus diarrhoea, including genotype distribution, in participating countries.

Implementation of global external quality assurance programme in both rotavirus and IBD surveillance network.

Key challenge: Few resources to provide support to middle-income countries to develop or strengthen surveillance for disease preventable by NUV.

Priorities for 2013: Expanding and strengthening IBD surveillance to ensure adequate data are available to meet information needs of countries and the Region; strengthening the capacity of laboratories to diagnose cases of vaccine-preventable IBD.



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Invasive bacterial disease (IBD)

The IBD surveillance network is quite new and currently encompasses five countries. The first meeting of the IBD network sites was held in Azerbaijan in December 2011.

In addition to supporting surveillance activities in low-income countries, a meeting was conducted in Dubrovnik in October 2011 for approximately 20 middle-income countries in the Region to discuss their needs and capacity for collecting local data on disease incidence and cost effectiveness for IBD. Following this meeting, pilot projects to support the establishment of sentinel surveillance for IBD were also implemented in two middle-income countries (Belarus, Hungary), which will contribute to the regional network in 2013.

In 2011, VPI coordinated the participation of the Regional Reference Laboratory (RRL) plus three national laboratories in an external quality assurance (EQA) programme newly introduced by WHO headquarters. In 2012, the number of national labs participating in EQA increased to five and several hospital laboratories also participated in the programme. All but one laboratory passed the EQA in 2012.

Also in 2011, WHO supported training of a scientist from the RRL at the WHO Global Reference Laboratory, CDC, in Atlanta, United States.

In 2012, the RRL provided training in advanced molecular diagnostic techniques to a scientist from a national laboratory of Georgia. Similar trainings had been provided to laboratory specialists from Belarus in 2010 and Ukraine in 2011.

Regional laboratory networking

The Regional Office works closely with the following networks to support polio eradication, measles-rubella elimination and the introduction of new vaccines:

- European Polio Laboratory Network
- Measles and Rubella Laboratory Network
- Sentinel Surveillance Laboratory Network for Rotavirus
- Sentinel Surveillance Laboratory Network for Invasive Bacterial Diseases
- HPV Laboratory Network.

The European Polio Laboratory Network plays a central role in maintaining the polio-free status of the Region by documenting the absence of wild poliovirus and rapidly detecting any imported poliovirus or circulating vaccine-derived poliovirus. The network continues to maintain extremely high levels of proficiency, with specimens being processed rapidly. In 2011, a total of 129 142 samples were processed from acute flaccid paralysis (AFP) cases and supplemental (environmental and/or enterovirus) surveillance systems. These analyses yielded no wild polioviruses providing a high level of confidence that wild poliovirus is not circulating in the Region.

WHO also supports an RRL at the Republican Research and Practical Center for Epidemiology and Microbiology in Minsk, Belarus, which provides genotype analysis of rotavirus specimens submitted by participating countries and conducts quality control testing for the network to ensure reliable results from all sites.

Moreover, WHO supports a RRL at Gabrichevsky Research Institute for Epidemiology and Microbiology in Moscow, Russian Federation, which provides technical consulting and quality control testing to participating countries, and also serotyping analysis of IBD specimens collected through the network.

In both 2011 and 2012, the Regional Office provided external quality assurance (EQA) control to all participating polio laboratories as part of the annual accreditation process. All WHO polio network laboratories, except one, were fully accredited in 2012.

The Regional Office also supervised annual accreditation reviews to ensure high-quality laboratory investigation for measles and rubella in the Region. Additionally, it rolled out a specimen-based measles and rubella data management system for the measles and rubella labs in the Region.

7. Improving communication and advocacy

Communication plays a vital role in global efforts to eradicate vaccine-preventable diseases. Sufficient immunization coverage can only be reached if evidence-based information on the efficacy and safety of vaccines reaches policy-makers, health care workers and parents.

In September 2010 the WHO Regional Committee for Europe concluded that new methods of communicating about vaccines, stronger communication capacity in countries and improved coordination of activities would help restore public trust and increase demand for immunization. The Regional Office responded to this conclusion by establishing a Vaccine Communications Working Group, developing communication materials for various target groups and stepping up a range of advocacy activities.

Vaccine Communications Working Group (VCWG)

The VCWG serves the Region by:

- equipping Member States with the tools and approaches they need to drive demand for vaccines, address anti-vaccination sentiment and respond to vaccine-preventable disease outbreaks (i.e. crisis communications);
- making strategic use of communications to promote positive health outcomes, based on proven approaches and models;
- strengthening Member States' capacity and equipping them with the ability to tailor their communication activities and responses, frame and pre-test messages and materials, and utilize both mass media and interpersonal channels to optimize coverage; and
- partnering with clinicians and other health care workers to carefully assess their gatekeeper role and identify mechanisms that ensure their attitudes towards immunization are consistent with national/ regional goals.

BEHAVIOUR CHANGE AND COMMUNICATIONS 2011–2012

Key achievements: Expansion of outreach through new communication channels and materials.

Key challenge: Restoring public trust and increasing demand for immunization.

Priority for 2013: Reinforcing political commitment, strengthening the suite of materials targeting health care professionals, and equipping 3-4 Member States to tailor their immunization programmes.

VACCINE COMMUNICATION MATERIALS

Supporting health professionals and their patients

An online Immunization Resource Centre has been set up to assist health professionals in their day-to-day work as it relates to immunization. Some resources are intended to inform health workers themselves, while others are meant to be shared by health workers with their patients to help foster constructive dialogue with parents about vaccinating their children.

Responding to a vaccine safety event

A few instances of adverse events following immunization have taken place in recent years, significantly impacting immunization coverage rates in a few countries of the Region. The consequences of these situations have made it clear that it is vital to act proactively on issues of vaccine safety, prompting the VPI Programme to develop guidance for *Managing risks associated with vaccine safety*, as well as the accompanying *Vaccine safety events: managing the communications response*.

These documents provide practical, informative strategies and tools to help national immunization managers plan and administer a communications response following a vaccine-safety-related event. The guidelines outline how to use communications tactics and tools to minimize the negative impact of safety events on public confidence and trust, and also advocate for the development of a national vaccine safety communications plan or manual.

Rapid response to adverse vaccine safety event in Romania

In the past decade, bacille Calmette–Guérin (BCG) vaccination against tuberculosis (TB) has halved the number of TB cases in children under 14 years in Romania. However, on 22 November 2012, Romania's Ministry of Health temporarily suspended BCG vaccination as a precautionary measure, following reports of enlarged lymph nodes in children after administration of the vaccine produced by the State Serum Institute (SSI) of Denmark.

A joint WHO/Europe and European Centre for Disease Prevention and Control (ECDC) mission arrived in Romania on 26 November 2012 to assess the safety profile of the WHO prequalified BCG vaccine in use. During the four-day investigation, the team met with national authorities, experts and health care workers and visited hospitals' neonatal wards and TB departments. It analysed:

- BCG vaccine safety
- vaccine administration practices
- the severity, frequency and treatment of vaccine reactions
- the public's perception of BCG vaccine.

The mission concluded that restarting BCG vaccination with the SSI strain in infants was both safe and urgent. Observed vaccine reactions were within expected rates for the specific product, resolving without long-term consequences. Concerns had been raised because the local vaccine reaction had not been registered to the same extent with the product used previously. The rapid investigation and risk assessment, with appropriate risk communication to the public and health care professionals, ensured that there was no long-term negative effect on the immunization system.

Romania's BCG vaccination programme resumed its activities, taking into account the mission's recommendations to:

- strengthen the risk management plan
- intensify monitoring of adverse events to detect them early and enable rapid and appropriate action
- develop a communication plan for health care workers and the public.

Targeting under- and un-vaccinated populations

The Regional Office has developed a guide for tailoring immunization programme activities to more appropriately and effectively meet the needs of susceptible populations and to increase the demand for vaccines in under- and un-vaccinated populations. The guide reframes the response to reaching pockets of susceptible populations, enabling Member States to tailor service delivery and communication campaigns, which will, in turn, assist the Region in meeting elimination and eradication goals.

During 2012, the *Tailoring immunization programmes* (TIP) guide was pilot tested in pre-defined marginalized and at-risk population groups in Bulgaria. It will be rolled-out in Sweden and other Member States in 2013.

Pilot testing of TIP guide in Bulgaria

The *Tailoring immunization programmes* (TIP) guide enables Member States to better meet the needs of susceptible populations by identifying and responding to behavioural barriers to immunization. The guide was pilot-tested in Bulgaria in 2012 and the findings will be presented in a report in 2013.

Next steps include development of a concept note with strategic recommendations on how to increase uptake of infant and child immunization among marginalized, including Roma, communities in Bulgaria.

Lessons learnt through this piloting project will be used to enhance the guide, which will then be made available to all Member States in the Region.

European Immunization Week

Each April, European Immunization Week (EIW) provides a platform for Member States to raise awareness of immunization and increase the Region's commitment to maintaining high immunization coverage. EIW 2011 took place against the backdrop of alarming measles outbreaks across the Region, and received unprecedented media coverage including in high-profile outlets such as CNN, BBC and Al Jazeera. In 2012, all 53 Member States in the WHO European Region took part, marking a milestone in EIW's seven-year history. Such widespread support is particularly critical for the Region as Member States work to eliminate measles and rubella by 2015 and to maintain Europe's polio-free status.

2012 also marked the first time that all WHO regions joined together for a World Immunization Week, giving a global perspective to the initiative.



European
Immunization
Week

Prevent Protect Immunize



Other advocacy work

The VPI Programme provides information and advocates for immunization on the Regional Office vaccination and immunization web site, the EIW campaign site, social media and through presentations on a range of immunization topics at meetings and conferences around the Region.

The vaccines and immunization web site continues to play a prominent role as the platform for information sharing within the broader Regional Office site. During the 2011–2012 period, it reliably generated thousands of page views each month, including more than 15 000 views in April 2011 during EIW. For the first time ever, a live Question & Answer chat session on building trust in vaccines and the services that deliver them was hosted via the web site on 7 May 2012.

The Regional Office received strong support in its advocacy work from its Patron, HRH Crown Princess Mary of Denmark, and former WHO Special Representative for Immunization, HRH Princess Mathilde of Belgium (now HRH Queen Mathilde of Belgium), both of whom helped raise awareness in 2011–2012 about disease prevention with a special focus on immunization.

9. Publications

WHO Regional Office for Europe web site

Available at: www.euro.who.int/en/what-we-do/health-topics/disease-prevention/vaccines-and-immunization/publications

- *WHO EpiData* (monthly epidemiological data tables)
- *WHO EpiBrief* (summary and analysis of data on selected vaccine-preventable diseases collected by WHO/Europe)
- *European Immunization Week 2012 Narrative report*
- *Report of the 26th Meeting of the European Regional Certification Commission for Poliomyelitis Eradication*, June 2012
- *Surveillance guidelines for measles, rubella and congenital rubella syndrome in the WHO European Region*, December 2012 update
- *Report of the 12th meeting of the European Technical Advisory Group of Experts on Immunization (ETAGE)*, October 2012
- *Report of the 11th meeting of the European Technical Advisory Group of Experts on Immunization (ETAGE)*, March 2011
- *Reported measles cases in the WHO European Region 1990–2011*

WHO headquarters web site

- *Weekly Epidemiological Record* (www.who.int/wer/en/)

Peer-reviewed publications

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WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

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